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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/578,905	05/12/2006	Norio Uemura	108179-00056	5024

4372 7590 08/10/2009

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EXAMINER	
BASKIN, JEREMY S	

ART UNIT	PAPER NUMBER
3753	

NOTIFICATION DATE	DELIVERY MODE
08/10/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

DCIPDocket@arentfox.com
IPMatters@arentfox.com
Patent_Mail@arentfox.com

Office Action Summary	Application No.	Applicant(s)	
	10/578,905	UEMURA ET AL.	
	Examiner	Art Unit	
	Jeremy S. Baskin	3753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 April 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6* is/are pending in the application.

4a) Of the above claim(s) *2-4 and 6* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 5* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 May 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Claims 1-6 are pending and Claims 2-4 and 6 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 20 November 2008. The request for rejoinder of the above claims in the reply filed on 24 April 2009 can not be granted since the claims depend upon a rejected claim.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perach (4,538,645) in view of Parekh (4,538,645).

In regard to Claim 1, Perach teaches a capacity control valve 110 comprising a solenoid portion 122, a tube 138 placed in the solenoid portion, and a movable core 128. The moveable core forms a slide surface 97 and a non-contact surface (96 via Gr) forms on the outer diameter surface and the slide surface is fitted to the tube (col. 5, lines 2-6). The diameter of the non-contact surface is formed smaller than the diameter of said slide surface (col. 5, lines 2-6) and the axial length of the slide surface is formed shorter than the axial length of said non-contact surface (Figure 2). A solenoid rod portion 174 is coupled to the movable core (col. 4, lines 25-26) and forms an abutting surface 90 opposite to the movable core (Figure 2). A fixed core 146

defines an inner bore 148 and is placed in an opposing manner against the movable core (Figure 2) where the inner bore is loosely fitted to the solenoid rod portion (Figure 2). An actuation rod (below 90) forms a joint portion (at 90) and a valve body 166. The joint portion is engaged with the abutting surface 90 and the valve body 166 opens or closes a control fluid passage hole 164.

Perach fails to specifically teach where either the joint surface or abutting face of said actuation rod is formed a concave cone-shape surface while the other is formed a convex cone-shape portion. Perach fails to further teach where the solenoid rod portion and actuation rod are separate members that abut against each other.

Parekh discloses a variable displacement compressor control valve. In Figure 3, Parekh teaches wherein either one of said joint surface of said solenoid rod portion 34 or said abutting face of said actuation rod 37 is formed a concave cone-shape surface 37 while the other is formed a convex cone-shape portion 34. The two members are formed separately. The recitation of "and wherein the concave cone-shape surface abutting against the convex cone-shape portion provides secure retainment and is free of any fluctuation as the actuation rod securely holds the free end portion of the solenoid rod portion, which is connected to the movable core" is a statement of functional language. While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. See MPEP 2114.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate, in Perach, a cone shaped male/female connection between the solenoid rod and actuation rod within a fluid control valve, as taught by Parekh, so as to perpetuate a desired linear force between two rod members while maintaining proper alignment.

In regard to Claim 5, Perach teaches where the slide surface (97) is placed on the end portion of the outer diameter surface of the movable core (see Figure 2) and the axial length of the slide surface is not more than one quarter of the total length of the outer diameter surface (see Figure 2).

Response to Arguments

4. Applicant's arguments filed 24 April 2009 have been fully considered but they are not persuasive. Regarding Applicant's arguments of Claim 1 (Remarks, page 7, para. 3), Applicant asserts that the movable core of Perach does not have a slide surface and that the gap (Gr') clearly indicates that the surface 97 is not a slide surface. This is not the case. The axially extending portion 97 of the movable core possesses a gap Gr' that is smaller than the gap of Gr, thus allowing for a sliding fit of the movable core within the tube (col. 7, lines 52-66). In order for the claimed invention of the Applicant's disclosure to function properly, a gap must exist between the slide surface and tube to allow for a sliding fit between the movable core and tube.

Applicant states Perach in view of Parekh, alone or in combination, do not teach or suggest each and every feature of the rejected claims. Applicant asserts that Parekh merely teaches a compressor control valve having a convex-cone shape portion 34 and that Parekh does not teach or suggest a capacity control valve having a solenoid portion, a tube, a movable core, a solenoid rod portion, a fixed core, and an actuation rod. The claimed elements of a solenoid portion, a tube, a movable core, a solenoid rod portion, a fixed core, and an actuation rod are established in the primary reference of Perach and need not be found within the secondary reference of Parekh to preclude it from being a suitable reference. Furthermore, the device of

Parekh is a variable displacement compressor control valve that is actuated via a solenoid 52, thus making it a suitable reference to combine with elements of Perach to allow one of ordinary skill in the art to arrive at Applicant's claimed invention.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Harden et al. (5,540,558) teaches a solenoid valve with an actuation rod possessing a concave portion.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy S. Baskin whose telephone number is (571) 270-7421. The examiner can normally be reached on Monday through Friday, 7:30AM to 5:00PM ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on 571-272-4777. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/STEPHEN HEPPERLE/
Primary Examiner, Art Unit 3753

/J. S. B./
Examiner, Art Unit 3753